

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: SOBOLEWSKI, Daniel

SERIAL NO.:

FILED: Herewith

TITLE: PROCESS AND DEVICE TO FORM A BUNG AND A FABRICATION MOLD FOR A HOLLOW BODY, SUCH AS A TANK, PROVIDED WITH A BUNG, EQUIPPED WITH SUCH A DEVICE

PRELIMINARY AMENDMENT

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

In conjunction with the filing of the present application, and prior to an initial Official Action on this matter, please amend the above-identified application as follows:

IN THE TITLE

In the title, please insert the title as follows on the first page:

PROCESS AND DEVICE TO FORM A BUNG AND A FABRICATION MOLD FOR A HOLLOW BODY, SUCH AS A TANK, PROVIDED WITH A BUNG, EQUIPPED WITH SUCH A DEVICE

IN THE SPECIFICATION

In Paragraph [0011], please substitute the paragraph as follows:

The invention will be better understood after reading the following description, together with the attached drawings.

In Paragraph [0012], please substitute the paragraph as follows:

Figures 1a through 1f are schematic views showing various steps of one implementation example of the process under the invention.

In Paragraph [0013], please substitute the paragraph as follows:

Figure 2 is a perspective view of an embodiment of the device under the invention.

In Paragraph [0014], please substitute the paragraph as follows:

Figure 3a is a sectional view of the embodiment example from Figure 2 in radial section.

In Paragraph [0015], please substitute the paragraph as follows:

Figure 3b is a sectional view of an alternative implementation of the former.

In Paragraph [0016], please substitute the paragraph as follows:

Figure 4 is a cross sectional view along line IV-IV represented in Figure 3a.

In Paragraph [0018], please substitute the paragraph as follows:

Figure 6 is a perspective view of one of the components of the cutting means in Figure 2 embodiment example.

In Paragraph [0028], please substitute the paragraph as follows:

As an example, the successive steps taken are the following:

the piece 1 and protrusion 2 are molded through blow extrusion from the block of each other in enclosure 5 provided with its imprint 13, as shown in Figure 1a;

with the piece 1 provided with its protrusion 2 in place in the enclosure 5, as shown in Figure 1b, the driving means 6 are operated to release piece 1 by unscrewing it, with the cutting means 7 moving parallel to axis 10 under the action of said driving means 6 faster than the separation movement 11 resulting from the unscrewing, as shown in Figure 1c;

once the piece 1 is released and the previously closed end 4 is cut, said piece 1 provided with its threaded bung 8 is removed from enclosure 5, as shown on Figures 1d and 1e; and

then, the cutting means are returned to their original position before starting a new cycle, as shown in Figure 1f.

In Paragraph [0044], please substitute the paragraph as follows:

Referring again to Figures 2, 4 and 5, it is noted that the device under the invention can also contain means to initiate a cut into the thickness of said previously closed end 4. They consist of:

means to position in a protruding manner said blades 19 in relation to hole 24 through which they emerge; and

a rib 37 extending in a circular manner around said pivot axis 10 the protruding part of said blades 19 at the surface of said component 17 bearing the imprint.

### IN THE CLAIMS

In Claim 1, please substitute the claim as follows:

1. (Amended) Bung forming process comprising:

positioning a piece (1) comprised of a protrusion (2) designed to define said bung, said protrusion (2) comprising a conduit (3) with a previously closed end (4);

placing said piece (1) in enclosure (5);

permitting release of said piece (1) from said enclosure (5) using relative driving means (6) of one piece (1) in relation to another (5) ; and

unplugging said previously closed end (4) using cutting means (7) operated, directly or not, by said driving means (6).

In Claim 3, please substitute the claim as follows:

3. (Amended) Process according to claim 2 further comprising, prior to releasing piece (1), forming a thread at the surface of said conduit using an imprint (13) defining part of said enclosure (5), the rotation of said driving means (6) being transformed into a separation movement of said piece (1) and of said enclosure (5) by unscrewing said protrusion (2).

In Claim 4, please substitute the claim as follows:

4. (Amended) Device to form a bung, comprising:

an enclosure (5) capable of accommodating a piece (1) comprised of a protrusion (2) designed to define said bung,

relative driving means (6) of said piece (1) in relation to said enclosure (5), capable of permitting a release of said piece (1) from said enclosure (5); and

cutting means (7) to unplug a previously closed end (4) of a conduit (3) comprising said protrusion (2), operated by said driving means (6).

In Claim 6, please substitute the claim as follows:

6. (Amended) Device according to claim 5, further comprising means to make a thread at the surface of said conduit (3) comprising an imprint (13) defining part of said enclosure (5); wherein said first means (15) to transform the rotation of said driving means (6) is comprised of the thread made at the surface of said piece (1) to be operated in rotation by said driving means (6).

In Claim 7, please substitute the claim as follows:

7. (Amended) Device according to claim 6 wherein said driving means (6) comprises a component (17) bearing said imprint (13) and a rotating central core (18), capable of operating said component (17) bearing the imprint around said pivot axis (10).

In Claim 8, please substitute the claim as follows:

8. (Amended) Device according to claim 7 wherein said cutting means (7) comprises  
one or more blades (19), with said blade(s) (19) resting at one end (20) on a nut (21),  
driven under the action of the central core (18) in either direction about said pivot axis (10) inside  
a reservation (22) provided between said central core (18); and  
a fixed sleeve (23), coaxial to said central core (18), with said blade(s) (19) emerging  
via a hole (24) through said component (17) bearing the imprint with their end (25) opposite to that  
(20) resting on said nut (21).

In Claim 11, please substitute the claim as follows:

11. (Amended) Device according to claim 10, wherein said means (32) to hold said previously closed end (4) comprises a slot (33) provided crosswise in the thickness of said blades (19) at the level of their face (34) designed to be opposite to said previously closed end (4) when cutting.

In Claim 13, please substitute the claim as follows:

13. (Amended) Device according to claim 12, wherein said means to initiate a cut comprises:  
means to position in a protruding manner said blades (19) in relation to hole (24) from which they emerge, before cutting; and  
a rib (37) extending in a circular manner around said pivot axis (10) the protruding part of said blades (19) at the surface of said component (17) bearing the imprint.

In Claim 14, please substitute the claim as follows:

14. (Amended) Device according to claim 13, wherein said positioning means comprise means permitting to adjust a position of the ends (20) of the blades resting on said nut (21) in relation to the bottom (39) of a groove (40) provided therein.

In Claim 15, please substitute the claim as follows:

15. (Amended) Fabrication mold for a hollow body, such as a tank, comprised of a bung, equipped with the device according to Claim 8.

In Claim 16, please substitute the claim as follows:

16. (Amended) Mold according to claim 15, comprising a first and second imprints defining between them a mold cavity of said hollow bodies, with said first and second imprints being capable of separating from each other along a direction roughly parallel to the longitudinal axis of said conduit (3), said mold being comprised of a central core (18) fixed in relation to said first or second imprint in which said device is to be located.

In Claim 17, please substitute the claim as follows:

17. (Amended) Mold according to claim 15, comprising a first and second imprints defining between them a mold cavity of said hollow bodies, with said first and second imprints being capable of separating from each other along a direction concurrent to the longitudinal axis of said conduit (3), said mold being comprised of a central core (18) mobile along said longitudinal axis of the conduit (3) in relation to said first or second imprint in which said device is to be located.

#### IN THE ABSTRACT

On page 15, please substitute the paragraph as follows:

A process and a device to form a bung in which a piece is provided that features a protrusion designed to define the bung, wherein the protrusion includes a conduit equipped with a previously closed first end, with the piece in place in an enclosure. The piece is released from the enclosure using a relative driver of one in relation to the other and the previously closed end is unplugged using a cutting device operated, directly or not, by the driver. The invention concerns also a fabrication mold for a hollow body, such as a tank, provided with a bung, equipped with the above-described device.

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REMARKS ON PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In this preliminary amendment, please consider the following remarks in conjunction with the amendments to the above-identified application as follows:

REMARKS

The present Preliminary Amendment has been entered for the purpose of placing the application into a more proper U.S. format. In particular, certain grammatical and idiomatic inconsistencies have been corrected by amendment to the specification, and the application is corrected for certain typographical errors found in the originally submitted application. No new matter has been added by these amendments. The present application is based upon an English translation of the French priority document.

The claims and Abstract have been amended so as to conform with U.S. requirements.

Applicant respectfully requests that the present Amendment be entered prior to an initial Official Action on the present application.

Respectfully submitted,

Date

12-11-01

  
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VERSION WITH MARKINGS TO SHOW CHANGES in the PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In conjunction with the filing of the present application, and prior to an initial Official Action on this matter, please amend the above-identified application as follows:

IN THE TITLE

In the title, the title has been inserted as follows:

PROCESS AND DEVICE TO FORM A BUNG AND A FABRICATION MOLD FOR A HOLLOW BODY, SUCH AS A TANK, PROVIDED WITH A BUNG, EQUIPPED WITH SUCH A DEVICE

IN THE SPECIFICATION

In Paragraph [0011], the paragraph has been amended as follows:

The invention will be better understood after reading the following description, together with the attached drawings[ in which:].

In Paragraph [0012], the paragraph has been amended as follows:

[- ]Figures 1a through 1f [schematically show the] are schematic views showing various steps of one implementation example of the process under the invention.

In Paragraph [0013], the paragraph has been amended as follows:

[- ]Figure[s] 2 [shows in perspective an example] is a perspective view of an embodiment of the device under the invention.

In Paragraph [0014], the paragraph has been amended as follows:

[- ] Figure 3a [shows] is a sectional view of the embodiment example from Figure 2 in radial section.

In Paragraph [0015], the paragraph has been amended as follows:

[- ]Figure 3b [shows] is a sectional view of an alternative implementation of the former.

In Paragraph [0016], the paragraph has been amended as follows:

[- ]Figure 4 is a cross [section] sectional view along line IV-IV represented in Figure 3a.

In Paragraph [0018], the paragraph has been amended as follows:

[- ]Figure 6 [shows in perspective] is a perspective view of one of the components of the cutting means in Figure 2 embodiment example.

In Paragraph [0028], the paragraph has been amended as follows:

As an example, the successive steps taken are the following:

[- ]the piece 1 and protrusion 2 are molded through blow extrusion from the block of each other in enclosure 5 provided with its imprint 13, as shown in Figure 1a[.];

[- ]with the piece 1 provided with its protrusion 2 in place in the enclosure 5, as shown in Figure 1b, the driving means 6 are operated to release piece 1 by unscrewing it, with the cutting means 7 moving parallel to axis 10 under the action of said driving means 6 faster than the separation movement 11 resulting from the unscrewing, as shown in Figure 1c[.];

[- ]once the piece 1 is released and the previously closed end 4 is cut, said piece 1 provided with its threaded bung 8 is removed from enclosure 5, as shown on Figures 1d and 1e[.]; and

[-] then, the cutting means are returned to their original position before starting a new cycle, as shown in Figure 1f.



In Paragraph [0044], the paragraph has been amended as follows:

Referring again to Figures 2, 4 and 5, it is noted that the device under the invention can also contain means to initiate a cut into the thickness of said previously closed end 4. They consist of:

[- ] means to position in a protruding manner said blades 19 in relation to hole 24 through which they emerge[.]; and

[- ] a rib 37 extending in a circular manner around said pivot axis 10 the protruding part of said blades 19 at the surface of said component 17 bearing the imprint.

### IN THE CLAIMS

In Claim 1, the claim has been amended as follows:

1. (Amended) Bung forming process [in which] comprising:  
    positioning a piece (1) [is provided, featuring] comprised of a protrusion (2) designed to define said bung, said protrusion (2) [constituting] comprising a conduit (3) with a previously closed end (4)[,];  
    placing [with] said piece (1) [in place] in enclosure (5);  
    permitting [the] release of said piece (1) from said enclosure (5) [is permitted] using relative driving means (6) of one piece (1) in relation to [the other] another (5); and [in which] unplugging said previously closed end (4) [is unplugged] using cutting means (7) operated, directly or not, by said driving means (6).

In Claim 3, the claim has been amended as follows:

3. (Amended) Process according to claim 2 [in which,] further comprising, prior to releasing piece (1), forming a thread [is made] at the surface of said conduit using an imprint (13) defining part of said enclosure (5) [and], the rotation of said driving means (6) [is] being transformed into a separation movement of said piece (1) and of said enclosure (5) by unscrewing said protrusion (2).

In Claim 4, the claim has been amended as follows:

4. (Amended) Device to form a bung, comprising:  
    an enclosure (5) capable of accommodating a piece (1) [featuring] comprised of a protrusion (2) designed to define said bung,  
    relative driving means (6) of said piece (1) in relation to said enclosure (5), capable of permitting [the] a release of said piece (1) from said enclosure (5); and  
    cutting means (7) to unplug a previously closed end (4) of a conduit (3) [consisting of] comprising said protrusion (2), operated by said driving means (6).

In Claim 6, the claim has been amended as follows:

6. (Amended) Device according to claim 5, further comprising means to make a thread at the surface of said conduit (3) [consisting of] comprising an imprint (13) defining part of said enclosure (5) [and in which]; wherein said first means (15) to transform the rotation of said driving means (6) [consist] is comprised of the thread made at the surface of said piece (1) to be operated in rotation by said driving means (6).

In Claim 7, the claim has been amended as follows:

7. (Amended) Device according to claim 6 [in which] wherein said driving means (6) [consist of] comprises a component (17) bearing said imprint (13) and [of] a rotating central core (18), capable of operating said component (17) bearing the imprint around said pivot axis (10).

In Claim 8, the claim has been amended as follows:

8. (Amended) Device according to claim 7 [in which] wherein said cutting means (7) [consist of] comprises

one or more blades (19), with said blade(s) (19) resting at one end (20) on a nut (21), driven under the action of the central core (18) in either direction about said pivot axis (10) inside a reservation (22) provided between said central core (18) [and] ; and

a fixed sleeve (23), coaxial to said central core (18), with said blade(s) (19) emerging via a hole (24) through said component (17) bearing the imprint with their end (25) opposite to that (20) resting on said nut (21).

In Claim 11, the claim has been amended as follows:

11. (Amended) Device according to claim 10, [in which] wherein said means (32) to hold said previously closed end (4) [consist of] comprises a slot (33) provided crosswise in the thickness of said blades (19) at the level of their face (34) designed to be opposite to said previously closed end (4) when cutting.

In Claim 13, the claim has been amended as follows:

13. (Amended) Device according to claim 12, [in which] wherein said means to initiate a cut [consist of] comprises:

[- ]means to position in a protruding manner said blades (19) in relation to hole (24) from which they emerge, before cutting[.]; and

[-] a rib (37) extending in a circular manner around said pivot axis (10) the protruding part of said blades (19) at the surface of said component (17) bearing the imprint.

In Claim 14, the claim has been amended as follows:

14. (Amended) Device according to claim 13, [in which] wherein said positioning means [consist of] comprise means permitting to adjust [the] a position of the ends (20) of the blades resting on said nut (21) in relation to the bottom (39) of a groove (40) provided therein.

In Claim 15, the claim has been amended as follows:

15. (Amended) Fabrication mold for a hollow body, such as a tank, [provided with] comprised of a bung, equipped with the device according to [any of claims 8 through 14] Claim 8.

In Claim 16, the claim has been amended as follows:

16. (Amended) Mold according to claim 15, [consisting of] comprising a first and second imprints defining between them a mold cavity of said hollow bodies, with said first and second imprints being capable of separating from each other along a direction roughly parallel to the longitudinal axis of said conduit (3), said mold being [equipped with] comprised of a central core (18) fixed in relation to said first or second imprint in which said device is to be located.

In Claim 17, the claim has been amended as follows:

17. (Amended) Mold according to claim 15, [consisting of] comprising a first and second imprints defining between them a mold cavity of said hollow bodies, with said first and second imprints being capable of separating from each other along a direction concurrent to the longitudinal axis of said conduit (3), said mold being [equipped with] comprised of a central core (18) mobile along said longitudinal axis of the conduit (3) in relation to said first or second imprint in which said device is to be located.

#### IN THE ABSTRACT

On page 15, the paragraph has been amended as follows:

[The invention concerns a] A process and a device to form a bung in which a piece [(1)] is provided that features a protrusion [(2)] designed to define [said] the bung[, said] , wherein the protrusion [(2)] [constituting] includes a conduit [(3)] equipped with a previously closed first end, with [said] the

piece in place in an enclosure [(5); said] . The piece [(1)] is released from [said] the enclosure [(5)] using a relative [driving means (6)] driver of one in relation to the other and [said] the previously closed end is unplugged using [cutting means (7)] a cutting device operated, directly or not, by the driver [said driving means (6)]. The invention concerns also a fabrication mold for a hollow body, such as a tank, provided with a bung, equipped with the above-described device.

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